

Meteorology 2017 Exam — Answer Key

Multiple Choice (tiebreaker questions are highlighted) — 1 pt. each, 16 pts. possible

1. D	2. A	3. B	4. B	5. E
6. C	7. B	8. B	9. A	10. B
11. E	12. D	13. E	14. D	15. E
16. A	17. C	18. C	19. E	20. A

Free Response (tiebreaker questions are highlighted) — 24 pts. possible

21a. **Lake-Effect Snow** (1 point)

21b. **Location C.** In Michigan, lake-effect snow is more likely to occur in colder areas located to the east of a large body of water. The only location that fits this description is Location C. In addition, Western Michigan is frequently known for its lake-effect snow events.

(1 pt. for identifying Location C, 1 pt. for a good enough explanation)

22a. **A Rotating Wall Cloud** (1 point)

22b. **Supercell Thunderstorm** (1 point)

22c. A wall cloud generally points **toward** the precipitation, while a shelf cloud generally points **away** from the precipitation.

(1 point for correctly identifying the position of each cloud w.r.t. the precipitation)

23a. **Amanda** (1 point)

23b. **Cannot Be Determined** (1 point) — tropical storms are named as well, and there is no guarantee that the second storm of the season reaches hurricane status!

23c. **Felicia** (1 point)

23d. Any female name that begins with the letter K works.
($\frac{1}{2}$ a point deduction if the K name is male)

(1 point each)

24a. B	24b. A	24c. E	24d. D	24e. C	24f. E
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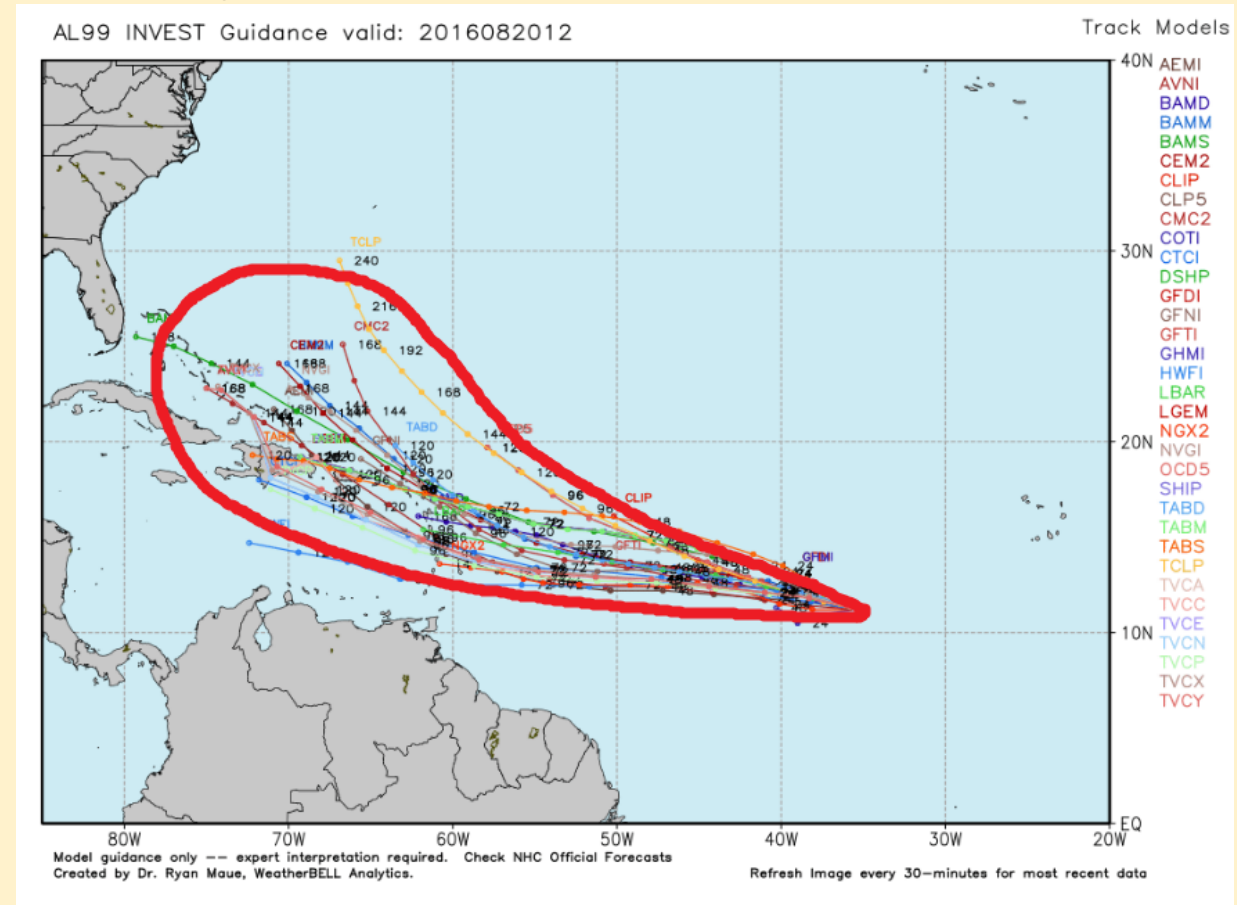
25a. Fall Speed of A = **40 meters per second** (1 point)
Fall Speed of B = **60 meters per second** (1 point)

25b. **Hailstone A** (1 point)

25c. **Hailstone B** (1 point)

26. **Debris Ball** (1 point)

27a. Something that looks similar to this is sufficient. (1 point)



27b. **Unlikely.** Most of the models in the diagram do not take the invest above Category 2 status, with most of them clustered in the Tropical Storm or Category 1 status at 120 hours. A major hurricane is a Category 3 or above, which does not even register on the diagram. However, the storm could still rapidly intensify into a major hurricane, but given the information in the diagram, this outcome, while possible, is still relatively unlikely. (1 point for correct circle, 1 point for reasoning)

28. **Yvonne.** Yvonne should expect the most snow because the path to her location consists of the greatest distance over the lake. This allows the cold air to pick up more heat and moisture along its journey. (1 pt for correct circle, 1 pt for reasoning)

29a. **Clockwise** (1 point)

29b. **Into Center** (1 point)

29c. **Aneroid Barometer** (1 point) — $\frac{1}{2}$ a point for only “barometer”

29d. **Low Pressure System** (1 point)

30. **GOES** (1 point)